CLAIMS

1. A terminal for providing a virtual environment interface to server means which maintains said virtual environment as a plurality of zones, comprising:

a client providing a user interface to the virtual environment to allow a user to control an avatar in the virtual environment; and

apparatus for estimating the likelihood of said avatar, under the control of said user in the virtual environment, moving within a predetermined range of a boundary, the apparatus comprising:

recording means for recording the position of the avatar at intervals to obtain movement data;

means for storing data as to the relative frequency of occurrence of different categories of said movement;

means arranged to read, from the stored data, frequency data for categories of movement such as would correspond to a potential movement of the avatar from its current position into a position within said predetermined range of said boundary;

wherein the client is arranged to obtain information from said server means about the status of the adjacent zone only when the likelihood of the avatar moving within the predetermined range of the boundary of said adjacent zone is above a threshold.

2. A terminal according to claim 1 wherein said threshold is determined in dependence upon a cost function.

3. A terminal according to claim 1 ~~or 2~~ wherein said threshold is determined in dependence upon the amount of communication traffic and/or the time taken for the communication with the server means.

4. A terminal according to ~~any preceding claim~~ claim 1 wherein said means for storing data is arranged to discard data relating to movement after a set period of time.

A 5. A terminal according to ~~any preceding claim~~ claim 1 wherein said recording means is adapted to record the position of said avatar at regular intervals of time in said virtual environment.

A 6. A terminal according to ~~any preceding claim~~ claim 1 wherein the potential movement of the avatar takes into consideration obstructions to the movement of said avatar within said virtual environment.

A 7. A terminal according to ~~any preceding claim~~ claim 1 wherein said predetermined range is dependent upon a range of awareness of said avatar within which said avatar can experience the virtual environment.

A 8. A terminal according to ~~any one of claims 1 to 7~~ claim 1 wherein said categories of movement are determined by run lengths.

A 9. A terminal according to ~~any one of claims 1 to 7~~ claim 1 wherein said categories of movement are determined by run lengths within a predefined corridor.

A 10. A terminal according to ~~any one of claims 1 to 7~~ claim 1 wherein said categories of movement are determined by the movement of said avatar into areas around said avatar.

11. A terminal according to ~~any one of claims 1 to 7~~ claim 1 wherein said categories of movement are determined by directions and distances of movement of said avatar.

12. Apparatus for estimating the likelihood of an avatar, under the control of a user in a virtual environment, moving within a predetermined range of a boundary, the apparatus comprising:

recording means for recording the position of the avatar at intervals to obtain movement data;

means for storing data as to the relative frequency of occurrence of different categories of said movement; and

means arranged to read, from the stored data, frequency data for categories of movement such as would correspond to a potential movement of the avatar from its current position into a position within said predetermined range of said boundary.

13. Apparatus according to claim 12 wherein said means for storing data is arranged to discard data relating to movement after a set period of time.

14. Apparatus according to ~~claims 12 or 13~~ claim 12 wherein said recording means is adapted to record the position of said avatar at regular intervals of time in said virtual environment.

15. Apparatus according to ~~any one of claims 12 to 14~~ claim 12 wherein the potential movement of the avatar takes into consideration obstructions to the movement of said avatar within said virtual environment.

16. Apparatus according to ~~any one of claims 12 to 15~~ claim 12 wherein said predetermined range is dependent upon a range of awareness of said avatar within which said avatar can experience the virtual environment.

17. Apparatus according to ~~any one of claims 12 to 16~~ claim 12 wherein said categories of movement are determined by run lengths.

18. Apparatus according to ~~any one of claims 12 to 16~~ claim 12 wherein said categories of movement are determined by run lengths within a predefined corridor.

19. Apparatus according to ~~any one of claims 12 to 16~~ claim 12 wherein said categories of movement are determined by the movement of said avatar into areas around said avatar.

20. Apparatus according to ~~any one of claims 12 to 16~~ claim 12 wherein said categories of movement are determined by directions and distances of movement of said avatar.

21. A system for providing a distributed virtual environment comprising:

one or more servers for maintaining said virtual environment as a plurality of zones;

a client for providing a user interface to the virtual environment to allow a user to control an avatar in the virtual environment; and

apparatus for predicting the likelihood of said avatar moving within a predetermined range of a boundary of a zone according to any one of claims 12 to 20;

wherein said client is arranged to communicate with the one or more servers to obtain information on the status of one or more further zones when the likelihood of the avatar moving within a predetermined range of the boundary of said one or more further zones is above a threshold.

22. A system according to claim 21 wherein said threshold is determined in dependence upon a cost function.

23. A system according to claim 21 ~~or 22~~ wherein said threshold is determined in dependence upon the amount of communication traffic and/or the time taken for the communication with the one or more servers.

24. A method of operating a computer terminal to provide a virtual environment interface to server means which maintain said virtual environment as a plurality of zones, the method comprising;

controlling a client which provides a user interface to the virtual environment to allow a user to control an avatar in the virtual environment; and

estimating the likelihood of said avatar, under the control of said user in a virtual environment, moving within a predetermined range of a boundary, the method for estimating said likelihood comprising:

recording the position of the avatar at intervals to obtain movement data;

storing data as to the relative frequency of occurrence of different categories of said movement;

reading, from the stored data, frequency data for categories of movement such as would correspond to a potential movement of the avatar from its current position into a position within said predetermined range of said boundary;

instructing the client to obtain information from said server means about the status of an adjacent zone only when the likelihood of the avatar moving within the predetermined range of the boundary of said adjacent zone is above a threshold.

25. A method according to claim 24 wherein said threshold is determined in dependence upon the amount of communication traffic and/or the time taken for the communication with the server means.

26. A method according to claim 24 wherein stored movement data is discarded after a set period of time.

27. A storage medium storing instructions for controlling a computer to carry out the method of any one of claims of ~~any one of claims 24 to 26~~ claim 24.

28. A signal carrying computer-implementable instructions for controlling a computer to carry out the method of any one of claims 24 to 26.